



RAW SEQUENCE LISTING ERROR REPORT

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Application Serial Number: 10/758,672
Source: IFwo -
Date Processed by STIC: 1/29/04 -

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<http://www.uspto.gov/web/offices/pac/checker/chkr41note.htm>

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Please consider using alternate methods of submission for the disk/CD-Rom or replacement disk/CD-Rom.

Any reply including a sequence listing in electronic form should NOT be sent to the 20231 zip code address for the United States Patent and Trademark Office, and instead should be sent via the following to the indicated addresses:

1. EFS-Bio (<<http://www.uspto.gov/efc/efs/downloads/documents.htm>> , EFS Submission User Manual - ePAVE)
2. U.S. Postal Service: Commissioner for Patents, P.O. Box 1450, Alexandria, VA. 22313-1450
3. Hand Carry directly to (EFFECTIVE 12/01/03):
U.S. Patent and Trademark Office, Box Sequence, Customer Window, Lobby, Room 1B03, Crystal Plaza Two, 2011 South Clark Place, Arlington, VA 22202
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Revised 10/08/03



IFWO

RAW SEQUENCE LISTING

DATE: 01/29/2004

PATENT APPLICATION: US/10/758,672

TIME: 15:33:28

Input Set : A:\35966B.txt

Output Set: N:\CRF4\01292004\J758672.raw

4 <110> APPLICANT: Han, Hui-Quan
 5 Kwak, Keith
 7 <120> TITLE OF INVENTION: Human E3 Alpha Ubiquitin Ligase Family
 9 <130> FILE REFERENCE: 01017/35966B
 C--> 11 <140> CURRENT APPLICATION NUMBER: US/10/758,672
 C--> 12 <141> CURRENT FILING DATE: 2004-01-15
 14 <150> PRIOR APPLICATION NUMBER: US 09/724,126
 15 <151> PRIOR FILING DATE: 2000-11-28
 17 <150> PRIOR APPLICATION NUMBER: US 60/187,911
 18 <151> PRIOR FILING DATE: 1999-03-08
 20 <160> NUMBER OF SEQ ID NOS: 29
 22 <170> SOFTWARE: PatentIn Ver. 2.0

ERRORED SEQUENCES

Does Not Comply
 Corrected Diskette Needed

511 <210> SEQ ID NO: 2
 512 <211> LENGTH: 1749
 513 <212> TYPE: PRT
 514 <213> ORGANISM: Homo sapiens
 516 <400> SEQUENCE: 2

pg 4-6

517	Met	Ala	Asp	Glu	Glu	Ala	Gly	Gly	Thr	Glu	Arg	Met	Glu	Ile	Ser	Ala
518	1				5					10					15	
520	Glu	Leu	Pro	Gln	Thr	Pro	Gln	Arg	Leu	Ala	Ser	Trp	Trp	Asp	Gln	Gln
521				20					25					30		
523	Val	Asp	Phe	Tyr	Thr	Ala	Phe	Leu	His	His	Leu	Ala	Gln	Leu	Val	Pro
524			35					40					45			
526	Glu	Ile	Tyr	Phe	Ala	Glu	Met	Asp	Pro	Asp	Leu	Glu	Lys	Gln	Glu	Glu
527		50					55				60					
529	Ser	Val	Gln	Met	Ser	Ile	Phe	Thr	Pro	Leu	Glu	Trp	Tyr	Leu	Phe	Gly
530	65					70				75					80	
532	Glu	Asp	Pro	Asp	Ile	Cys	Leu	Glu	Lys	Leu	Lys	His	Ser	Gly	Ala	Phe
533				85						90					95	
535	Gln	Leu	Cys	Gly	Arg	Val	Phe	Lys	Ser	Gly	Glu	Thr	Thr	Tyr	Ser	Cys
536				100					105					110		
538	Arg	Asp	Cys	Ala	Ile	Asp	Pro	Thr	Cys	Val	Leu	Cys	Met	Asp	Cys	Phe
539			115					120					125			
541	Gln	Asp	Ser	Val	His	Lys	Asn	His	Arg	Tyr	Lys	Met	His	Thr	Ser	Thr
542		130					135					140				
544	Gly	Gly	Gly	Phe	Cys	Asp	Cys	Gly	Asp	Thr	Glu	Ala	Trp	Lys	Thr	Gly
545	145					150					155					160
547	Pro	Phe	Cys	Val	Asn	His	Glu	Pro	Gly	Arg	Ala	Gly	Thr	Ile	Lys	Glu
548					165					170						175

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550 Asn Ser Arg Cys Pro Leu Asn Glu Glu Val Ile Val Gln Ala Arg Lys
551      180      185      190
553 Ile Phe Pro Ser Val Ile Lys Tyr Val Val Glu Met Thr Ile Trp Glu
554      195      200      205
556 Glu Glu Lys Glu Leu Pro Pro Glu Leu Gln Ile Arg Glu Lys Asn Glu
557      210      215      220
559 Arg Tyr Tyr Cys Val Leu Phe Asn Asp Glu His His Ser Tyr Asp His
560 225      230      235      240
562 Val Ile Tyr Ser Leu Gln Arg Ala Leu Asp Cys Glu Leu Ala Glu Ala
563      245      250      255
565 Gln Leu His Thr Thr Ala Ile Asp Lys Glu Gly Arg Arg Ala Val Lys
566      260      265      270
568 Ala Gly Ala Tyr Ala Ala Cys Gln Glu Ala Lys Glu Asp Ile Lys Ser
569      275      280      285
571 His Ser Glu Asn Val Ser Gln His Pro Leu His Val Glu Val Leu His
572      290      295      300
574 Ser Glu Ile Met Ala His Gln Lys Phe Ala Leu Arg Leu Gly Ser Trp
575 305      310      315      320
577 Met Asn Lys Ile Met Ser Tyr Ser Ser Asp Phe Arg Gln Ile Phe Cys
578      325      330      335
580 Gln Ala Cys Leu Arg Glu Glu Pro Asp Ser Glu Asn Pro Cys Leu Ile
581      340      345      350
583 Ser Arg Leu Met Leu Trp Asp Ala Lys Leu Tyr Lys Gly Ala Arg Lys
584      355      360      365
586 Ile Leu His Glu Leu Ile Phe Ser Ser Phe Phe Met Glu Met Glu Tyr
587      370      375      380
589 Lys Lys Leu Phe Ala Met Glu Phe Val Lys Tyr Tyr Lys Gln Leu Gln
590 385      390      395      400
592 Lys Glu Tyr Ile Ser Asp Asp His Asp Arg Ser Ile Ser Ile Thr Ala
593      405      410      415
595 Leu Ser Val Gln Met Phe Thr Val Pro Thr Leu Ala Arg His Leu Ile
596      420      425      430
598 Glu Glu Gln Asn Val Ile Ser Val Ile Thr Glu Thr Leu Leu Glu Val
599      435      440      445
601 Leu Pro Glu Tyr Leu Asp Arg Asn Asn Lys Phe Asn Phe Gln Gly Tyr
602      450      455      460
604 Ser Gln Asp Lys Leu Gly Arg Val Tyr Ala Val Ile Cys Asp Leu Lys
605 465      470      475      480
607 Tyr Ile Leu Ile Ser Lys Pro Thr Ile Trp Thr Glu Arg Leu Arg Met
608      485      490      495
610 Gln Phe Leu Glu Gly Phe Arg Ser Phe Leu Lys Ile Leu Thr Cys Met
611      500      505      510
613 Gln Gly Met Glu Glu Ile Arg Arg Gln Val Gly Gln His Ile Glu Val
614      515      520      525
616 Asp Pro Asp Trp Glu Ala Ala Ile Ala Ile Gln Met Gln Leu Lys Asn
617      530      535      540
619 Ile Leu Leu Met Phe Gln Glu Trp Cys Ala Cys Asp Glu Glu Leu Leu
620 545      550      555      560
622 Leu Val Ala Tyr Lys Glu Cys His Lys Ala Val Met Arg Cys Ser Thr

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```

623          565          570          575
625 Ser Phe Ile Ser Ser Ser Lys Thr Val Val Gln Ser Cys Gly His Ser
626          580          585          590
628 Leu Glu Thr Lys Ser Tyr Arg Val Ser Glu Asp Leu Val Ser Ile His
629          595          600          605
631 Leu Pro Leu Ser Arg Thr Leu Ala Gly Leu His Val Arg Leu Ser Arg
632          610          615          620
634 Leu Gly Ala Val Ser Arg Leu His Glu Phe Val Ser Phe Glu Asp Phe
635 625          630          635          640
637 Gln Val Glu Val Leu Val Glu Tyr Pro Leu Arg Cys Leu Val Leu Val
638          645          650          655
640 Ala Gln Val Val Ala Glu Met Trp Arg Arg Asn Gly Leu Ser Leu Ile
641          660          665          670
643 Ser Gln Val Phe Tyr Tyr Gln Asp Val Lys Cys Arg Glu Glu Met Tyr
644          675          680          685
646 Asp Lys Asp Ile Ile Met Leu Gln Ile Gly Ala Ser Leu Met Asp Pro
647          690          695          700
649 Asn Lys Phe Leu Leu Leu Val Leu Gln Arg Tyr Glu Leu Ala Glu Ala
650 705          710          715          720
652 Phe Asn Lys Thr Ile Ser Thr Lys Asp Gln Asp Leu Ile Lys Gln Tyr
653          725          730          735
655 Asn Thr Leu Ile Glu Glu Met Leu Gln Val Leu Ile Tyr Ile Val Gly
656          740          745          750
658 Glu Arg Tyr Val Pro Gly Val Gly Asn Val Thr Lys Glu Glu Val Thr
659          755          760          765
661 Met Arg Glu Ile Ile His Leu Leu Cys Ile Glu Pro Met Pro His Ser
662          770          775          780
664 Ala Ile Ala Lys Asn Leu Pro Glu Asn Glu Asn Asn Glu Thr Gly Leu
665 785          790          795          800
667 Glu Asn Val Ile Asn Lys Val Ala Thr Phe Lys Lys Pro Gly Val Ser
668          805          810          815
670 Gly His Gly Val Tyr Glu Leu Lys Asp Glu Ser Leu Lys Asp Phe Asn
671          820          825          830
673 Met Tyr Phe Tyr His Tyr Ser Lys Thr Gln His Ser Lys Ala Glu His
674          835          840          845
676 Met Gln Lys Lys Arg Arg Lys Gln Glu Asn Lys Asp Glu Ala Leu Pro
677          850          855          860
679 Pro Pro Pro Pro Pro Glu Phe Cys Pro Ala Phe Ser Lys Val Ile Asn
680 865          870          875          880
682 Leu Leu Asn Cys Asp Ile Met Met Tyr Ile Leu Arg Thr Val Phe Glu
683          885          890          895
685 Arg Ala Ile Asp Thr Asp Ser Asn Leu Trp Thr Glu Gly Met Leu Gln
686          900          905          910
688 Met Ala Phe His Ile Leu Ala Leu Gly Leu Leu Glu Glu Lys Gln Gln
689          915          920          925
691 Leu Gln Lys Ala Pro Glu Glu Glu Val Thr Phe Asp Phe Tyr His Lys
692          930          935          940
694 Ala Ser Arg Leu Gly Ser Ser Ala Met Asn Ile Gln Met Leu Leu Glu
695 945          950          955          960

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```

697 Lys Leu Lys Gly Ile Pro Gln Leu Glu Gly Gln Lys Asp Met Ile Thr
698                               965                               970                               975
700 Trp Ile Leu Gln Met Phe Asp Thr Val Lys Arg Leu Arg Glu Lys Ser
701                               980                               985                               990
703 Cys Leu Ile Val Ala Thr Thr Ser Gly Ser Glu Ser Ile Lys Asn Asp
704                               995                               1000                               1005
706 Glu Ile Thr His Asp Lys Glu Lys Ala Glu Arg Lys Arg Lys Ala Glu
707                               1010                               1015                               1020
709 Ala Ala Arg Leu His Arg Gln Lys Ile Met Ala Gln Met Ser Ala Leu
E--> 710 025 1025                               1030                               1035                               1040
712 Gln Lys Asn Phe Ile Glu Thr His Lys Leu Met Tyr Asp Asn Thr Ser
713                               1045                               1050                               1055
715 Glu Met Pro Gly Lys Glu Asp Ser Ile Met Glu Glu Glu Ser Thr Pro
716                               1060                               1065                               1070
718 Ala Val Ser Asp Tyr Ser Arg Ile Ala Leu Gly Pro Lys Arg Gly Pro
719                               1075                               1080                               1085
721 Ser Val Thr Glu Lys Glu Val Leu Thr Cys Ile Leu Cys Gln Glu Glu
722                               1090                               1095                               1100
724 Gln Glu Val Lys Ile Glu Asn Asn Ala Met Val Leu Ser Ala Cys Val
E--> 725 105 1105                               1110                               1115                               1120
727 Gln Lys Ser Thr Ala Leu Thr Gln His Arg Gly Lys Pro Ile Glu Leu
728                               1125                               1130                               1135
730 Ser Gly Glu Ala Leu Asp Pro Leu Phe Met Asp Pro Asp Leu Ala Tyr
731                               1140                               1145                               1150
733 Gly Thr Tyr Thr Gly Ser Cys Gly His Val Met His Ala Val Cys Trp
734                               1155                               1160                               1165
736 Gln Lys Tyr Phe Glu Ala Val Gln Leu Ser Ser Gln Gln Arg Ile His
737                               1170                               1175                               1180
739 Val Asp Leu Phe Asp Leu Glu Ser Gly Glu Tyr Leu Cys Pro Leu Cys
E--> 740 185 1185                               1190                               1195                               1200
742 Lys Ser Leu Cys Asn Thr Val Ile Pro Ile Ile Pro Leu Gln Pro Gln
743                               1205                               1210                               1215
745 Lys Ile Asn Ser Glu Asn Ala Asp Ala Leu Ala Gln Leu Leu Thr Leu
746                               1220                               1225                               1230
748 Ala Arg Trp Ile Gln Thr Val Leu Ala Arg Ile Ser Gly Tyr Asn Ile
749                               1235                               1240                               1245
751 Arg His Ala Lys Gly Glu Asn Pro Ile Pro Ile Phe Phe Asn Gln Gly
752                               1250                               1255                               1260
754 Met Gly Asp Ser Thr Leu Glu Phe His Ser Ile Leu Ser Phe Gly Val
E--> 755 265 1265                               1270                               1275                               1280
757 Glu Ser Ser Ile Lys Tyr Ser Asn Ser Ile Lys Glu Met Val Ile Leu
758                               1285                               1290                               1295
760 Phe Ala Thr Thr Ile Tyr Arg Ile Gly Leu Lys Val Pro Pro Asp Glu
761                               1300                               1305                               1310
763 Arg Asp Pro Arg Val Pro Met Leu Thr Trp Ser Thr Cys Ala Phe Thr
764                               1315                               1320                               1325
766 Ile Gln Ala Ile Glu Asn Leu Leu Gly Asp Glu Gly Lys Pro Leu Phe
767                               1330                               1335                               1340
769 Gly Ala Leu Gln Asn Arg Gln His Asn Gly Leu Lys Ala Leu Met Gln

```

When numbering
the first
amino acid on a
line, begin the
number directly
under the
first letter of
the amino acid.
e.g. Ala |²/₁₀₂₅ Ala

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E--> 770 345          1350          1355          1360
772 Phe Ala Val Ala Gln Arg Ile Thr Cys Pro Gln Val Leu Ile Gln Lys
773          1365          1370          1375
775 His Leu Val Arg Leu Leu Ser Val Val Leu Pro Asn Ile Lys Ser Glu
776          1380          1385          1390
778 Asp Thr Pro Cys Leu Leu Ser Ile Asp Leu Phe His Val Leu Val Gly
779          1395          1400          1405
781 Ala Val Leu Ala Phe Pro Ser Leu Tyr Trp Asp Asp Pro Val Asp Leu
782          1410          1415          1420
784 Gln Pro Ser Ser Val Ser Ser Ser Tyr Asn His Leu Tyr Leu Phe His
E--> 785 425          1430          1435          1440
787 Leu Ile Thr Met Ala His Met Leu Gln Ile Leu Leu Thr Val Asp Thr
788          1445          1450          1455
790 Gly Leu Pro Leu Ala Gln Val Gln Glu Asp Ser Glu Glu Ala His Ser
791          1460          1465          1470
793 Ala Ser Ser Phe Phe Ala Glu Ile Ser Gln Tyr Thr Ser Gly Ser Ile
794          1475          1480          1485
796 Gly Cys Asp Ile Pro Gly Trp Tyr Leu Trp Val Ser Leu Lys Asn Gly
797          1490          1495          1500
799 Ile Thr Pro Tyr Leu Arg Cys Ala Ala Leu Phe Phe His Tyr Leu Leu
E--> 800 505          1510          1515          1520
802 Gly Val Thr Pro Pro Glu Glu Leu His Thr Asn Ser Ala Glu Gly Glu
803          1525          1530          1535
805 Tyr Ser Ala Leu Cys Ser Tyr Leu Ser Leu Pro Thr Asn Leu Phe Leu
806          1540          1545          1550
808 Leu Phe Gln Glu Tyr Trp Asp Thr Val Arg Pro Leu Leu Gln Arg Trp
809          1555          1560          1565
811 Cys Ala Asp Pro Ala Leu Leu Asn Cys Leu Lys Gln Lys Asn Thr Val
812          1570          1575          1580
814 Val Arg Tyr Pro Arg Lys Arg Asn Ser Leu Ile Glu Leu Pro Asp Asp
E--> 815 585          1590          1595          1600
817 Tyr Ser Cys Leu Leu Asn Gln Ala Ser His Phe Arg Cys Pro Arg Ser
818          1605          1610          1615
820 Ala Asp Asp Glu Arg Lys His Pro Val Leu Cys Leu Phe Cys Gly Ala
821          1620          1625          1630
823 Ile Leu Cys Ser Gln Asn Ile Cys Cys Gln Glu Ile Val Asn Gly Glu
824          1635          1640          1645
826 Glu Val Gly Ala Cys Ile Phe His Ala Leu His Cys Gly Ala Gly Val
827          1650          1655          1660
829 Cys Ile Phe Leu Lys Ile Arg Glu Cys Arg Val Val Leu Val Glu Gly
E--> 830 665          1670          1675          1680
832 Lys Ala Arg Gly Cys Ala Tyr Pro Ala Pro Tyr Leu Asp Glu Tyr Gly
833          1685          1690          1695
835 Glu Thr Asp Pro Gly Leu Lys Arg Gly Asn Pro Leu His Leu Ser Arg
836          1700          1705          1710
838 Glu Arg Tyr Arg Lys Leu His Leu Val Trp Gln Gln His Cys Ile Ile
839          1715          1720          1725
841 Glu Glu Ile Ala Arg Ser Gln Glu Thr Asn Gln Met Leu Phe Gly Phe
842          1730          1735          1740

```

same
error

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Input Set : A:\35966B.txt

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844 Asn Trp Gln Leu Leu :
E--> 845 (745) *same*
1338 <210> SEQ ID NO: 4
1339 <211> LENGTH: 1755
1340 <212> TYPE: PRT
1341 <213> ORGANISM: Homo sapiens
1343 <400> SEQUENCE: 4
1344 Met Ala Ser Glu Leu Glu Pro Glu Val Gln Ala Ile Asp Arg Ser Leu
1345 1 5 10 15
1347 Leu Glu Cys Ser Ala Glu Glu Ile Ala Gly Lys Trp Leu Gln Ala Thr
1348 20 25 30
1350 Asp Leu Thr Arg Glu Val Tyr Gln His Leu Ala His Tyr Val Pro Lys
1351 35 40 45
1353 Ile Tyr Cys Arg Gly Pro Asn Pro Phe Pro Gln Lys Glu Asp Met Leu
1354 50 55 60
1356 Ala Gln His Val Leu Leu Gly Pro Met Glu Trp Tyr Leu Cys Gly Glu
1357 65 70 75 80
1359 Asp Pro Ala Phe Gly Phe Pro Lys Leu Glu Gln Ala Asn Lys Pro Ser
1360 85 90 95
1362 His Leu Cys Gly Arg Val Phe Lys Val Gly Glu Pro Thr Tyr Ser Cys
1363 100 105 110
1365 Arg Asp Cys Ala Val Asp Pro Thr Cys Val Leu Cys Met Glu Cys Phe
1366 115 120 125
1368 Leu Gly Ser Ile His Arg Asp His Arg Tyr Arg Met Thr Thr Ser Gly
1369 130 135 140
1371 Gly Gly Gly Phe Cys Asp Cys Gly Asp Thr Glu Ala Trp Lys Glu Gly
1372 145 150 155 160
1374 Pro Tyr Cys Gln Lys His Glu Leu Asn Thr Ser Glu Ile Glu Glu Glu
1375 165 170 175
1377 Glu Asp Pro Leu Val His Leu Ser Glu Asp Val Ile Ala Arg Thr Tyr
1378 180 185 190
1380 Asn Ile Phe Ala Ile Thr Phe Arg Tyr Ala Val Glu Ile Leu Thr Trp
1381 195 200 205
1383 Glu Lys Glu Ser Glu Leu Pro Ala Asp Leu Glu Met Val Glu Lys Ser
1384 210 215 220
1386 Asp Thr Tyr Tyr Cys Met Leu Phe Asn Asp Glu Val His Thr Tyr Glu
1387 225 230 235 240
1389 Gln Val Ile Tyr Thr Leu Gln Lys Ala Val Asn Cys Thr Gln Lys Glu
1390 245 250 255
1392 Ala Ile Gly Phe Ala Thr Thr Val Asp Arg Asp Gly Arg Arg Ser Val
1393 260 265 270
1395 Arg Tyr Gly Asp Phe Gln Tyr Cys Glu Gln Ala Lys Ser Val Ile Val
1396 275 280 285
1398 Arg Asn Thr Ser Arg Gln Thr Lys Pro Leu Lys Val Gln Val Met His
1399 290 295 300
1401 Ser Ser Ile Val Ala His Gln Asn Phe Gly Leu Lys Leu Leu Ser Trp
1402 305 310 315 320
1404 Leu Gly Ser Ile Ile Gly Tyr Ser Asp Gly Leu Arg Arg Ile Leu Cys
1405 325 330 335

8-10

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1407 Gln Val Gly Leu Gln Glu Gly Pro Asp Gly Glu Asn Ser Ser Leu Val
1408          340          345          350
1410 Asp Arg Leu Met Leu Ser Asp Ser Lys Leu Trp Lys Gly Ala Arg Ser
1411          355          360          365
1413 Val Tyr His Gln Leu Phe Met Ser Ser Leu Leu Met Asp Leu Lys Tyr
1414          370          375          380
1416 Lys Lys Leu Phe Ala Val Arg Phe Ala Lys Asn Tyr Gln Gln Leu Gln
1417 385          390          395          400
1419 Arg Asp Phe Met Glu Asp Asp His Glu Arg Ala Val Ser Val Thr Ala
1420          405          410          415
1422 Leu Ser Val Gln Phe Phe Thr Ala Pro Thr Leu Ala Arg Met Leu Ile
1423          420          425          430
1425 Thr Glu Glu Asn Leu Met Ser Ile Ile Ile Lys Thr Phe Met Asp His
1426          435          440          445
1428 Leu Arg His Arg Asp Ala Gln Gly Arg Phe Gln Phe Glu Arg Tyr Thr
1429          450          455          460
1431 Ala Leu Gln Ala Phe Lys Phe Arg Arg Val Gln Ser Leu Ile Leu Asp
1432 465          470          475          480
1434 Leu Lys Tyr Val Leu Ile Ser Lys Pro Thr Glu Trp Ser Asp Glu Leu
1435          485          490          495
1437 Arg Gln Lys Phe Leu Glu Gly Phe Asp Ala Phe Leu Glu Leu Leu Lys
1438          500          505          510
1440 Cys Met Gln Gly Met Asp Pro Ile Thr Arg Gln Val Gly Gln His Ile
1441          515          520          525
1443 Glu Met Glu Pro Glu Trp Glu Ala Ala Phe Thr Leu Gln Met Lys Leu
1444          530          535          540
1446 Thr His Val Ile Ser Met Met Gln Asp Trp Cys Ala Ser Asp Glu Lys
1447 545          550          555          560
1449 Val Leu Ile Glu Ala Tyr Lys Lys Cys Leu Ala Val Leu Met Gln Cys
1450          565          570          575
1452 His Gly Gly Tyr Thr Asp Gly Glu Gln Pro Ile Thr Leu Ser Ile Cys
1453          580          585          590
1455 Gly His Ser Val Glu Thr Ile Arg Tyr Cys Val Ser Gln Glu Lys Val
1456          595          600          605
1458 Ser Ile His Leu Pro Val Ser Arg Leu Leu Ala Gly Leu His Val Leu
1459          610          615          620
1461 Leu Ser Lys Ser Glu Val Ala Tyr Lys Phe Pro Glu Leu Leu Pro Leu
1462 625          630          635          640
1464 Ser Glu Leu Ser Pro Pro Met Leu Ile Glu His Pro Leu Arg Cys Leu
1465          645          650          655
1467 Val Leu Cys Ala Gln Val His Ala Gly Met Trp Arg Arg Asn Gly Phe
1468          660          665          670
1470 Ser Leu Val Asn Gln Ile Tyr Tyr Tyr His Asn Val Lys Cys Arg Arg
1471          675          680          685
1473 Glu Met Phe Asp Lys Asp Val Val Met Leu Gln Thr Gly Val Ser Met
1474          690          695          700
1476 Met Asp Pro Asn His Phe Leu Met Ile Met Leu Ser Arg Phe Glu Leu
1477 705          710          715          720
1479 Tyr Gln Ile Phe Ser Thr Pro Asp Tyr Gly Lys Arg Phe Ser Ser Glu

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1480          725          730          735
1482 Ile Thr His Lys Asp Val Val Gln Gln Asn Asn Thr Leu Ile Glu Glu
1483          740          745          750
1485 Met Leu Tyr Leu Ile Ile Met Leu Val Gly Glu Arg Phe Ser Pro Gly
1486          755          760          765
1488 Val Gly Gln Val Asn Ala Thr Asp Glu Ile Lys Arg Glu Ile Ile His
1489          770          775          780
1491 Gln Leu Ser Ile Lys Pro Met Ala His Ser Glu Leu Val Lys Ser Leu
1492 785          790          795          800
1494 Pro Glu Asp Glu Asn Lys Glu Thr Gly Met Glu Ser Val Ile Glu Ala
1495          805          810          815
1497 Val Ala His Phe Lys Lys Pro Gly Leu Thr Gly Arg Gly Met Tyr Glu
1498          820          825          830
1500 Leu Lys Pro Glu Cys Ala Lys Glu Phe Asn Leu Tyr Phe Tyr His Phe
1501          835          840          845
1503 Ser Arg Ala Glu Gln Ser Lys Ala Glu Glu Ala Gln Arg Lys Leu Lys
1504          850          855          860
1506 Arg Gln Asn Arg Glu Asp Thr Ala Leu Pro Pro Pro Val Leu Pro Pro
1507 865          870          875          880
1509 Phe Cys Pro Leu Phe Ala Ser Leu Val Asn Ile Leu Gln Ser Asp Val
1510          885          890          895
1512 Met Leu Cys Ile Met Gly Thr Ile Leu Gln Trp Ala Val Glu His Asn
1513          900          905          910
1515 Gly Tyr Ala Trp Ser Glu Ser Met Leu Gln Arg Val Leu His Leu Ile
1516          915          920          925
1518 Gly Met Ala Leu Gln Glu Glu Lys Gln His Leu Glu Asn Val Thr Glu
1519          930          935          940
1521 Glu His Val Val Thr Phe Thr Phe Thr Gln Lys Ile Ser Lys Pro Gly
1522 945          950          955          960
1524 Glu Ala Pro Lys Asn Ser Pro Ser Ile Leu Ala Met Leu Glu Thr Leu
1525          965          970          975
1527 Gln Asn Ala Pro Tyr Leu Glu Val His Lys Asp Met Ile Arg Trp Ile
1528          980          985          990
1530 Leu Lys Thr Phe Asn Ala Val Lys Lys Met Arg Glu Ser Ser Pro Thr
1531          995          1000          1005
1533 Ser Pro Val Ala Glu Thr Glu Gly Thr Ile Met Glu Glu Ser Ser Arg
1534          1010          1015          1020
1536 Asp Lys Asp Lys Ala Glu Arg Lys Arg Lys Ala Glu Ile Ala Arg Leu
E--> 1537 025/1025          1030          1035          1040
1539 Arg Arg Glu Lys Ile Met Ala Gln Met Ser Glu Met Gln Arg His Phe
1540          1045          1050          1055
1542 Ile Asp Glu Asn Lys Glu Leu Phe Gln Gln Thr Leu Glu Leu Asp Ala
1543          1060          1065          1070
1545 Ser Thr Ser Ala Val Leu Asp His Ser Pro Val Ala Ser Asp Met Thr
1546          1075          1080          1085
1548 Leu Thr Ala Leu Gly Pro Thr Gln Thr Gln Val Pro Glu Gln Arg Gln
1549          1090          1095          1100
1551 Phe Val Thr Cys Ile Leu Cys Gln Glu Glu Gln Glu Val Lys Val Glu
E--> 1552 105/1105          1110          1115          1120

```

same
error

RAW SEQUENCE LISTING

DATE: 01/29/2004

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TIME: 15:33:29

Input Set : A:\35966B.txt

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```

1554 Ser Arg Ala Met Val Leu Ala Ala Phe Val Gln Arg Ser Thr Val Leu
1555      1125      1130      1135
1557 Ser Lys Asn Arg Ser Lys Phe Ile Gln Asp Pro Glu Lys Tyr Asp Pro
1558      1140      1145      1150
1560 Leu Phe Met His Pro Asp Leu Ser Cys Gly Thr His Thr Ser Ser Cys
1561      1155      1160      1165
1563 Gly His Ile Met His Ala His Cys Trp Gln Arg Tyr Phe Asp Ser Val
1564      1170      1175      1180
1566 Gln Ala Lys Glu Gln Arg Arg Gln Gln Arg Leu Arg Leu His Thr Ser
E--> 1567 185      1190      1195      1200
1569 Tyr Asp Val Glu Asn Gly Glu Phe Leu Cys Pro Leu Cys Glu Cys Leu
1570      1205      1210      1215
1572 Ser Asn Thr Val Ile Pro Leu Leu Leu Pro Pro Arg Asn Ile Phe Asn
1573      1220      1225      1230
1575 Asn Arg Leu Asn Phe Ser Asp Gln Pro Asn Leu Thr Gln Trp Ile Arg
1576      1235      1240      1245
1578 Thr Ile Ser Gln Gln Ile Lys Ala Leu Gln Phe Leu Arg Lys Glu Glu
1579      1250      1255      1260
1581 Ser Thr Pro Asn Asn Ala Ser Thr Lys Asn Ser Glu Asn Val Asp Glu
E--> 1582 265      1270      1275      1280
1584 Leu Gln Leu Pro Glu Gly Phe Arg Pro Asp Phe Arg Pro Lys Ile Pro
1585      1285      1290      1295
1587 Tyr Ser Glu Ser Ile Lys Glu Met Leu Thr Thr Phe Gly Thr Ala Thr
1588      1300      1305      1310
1590 Tyr Lys Val Gly Leu Lys Val His Pro Asn Glu Glu Asp Pro Arg Val
1591      1315      1320      1325
1593 Pro Ile Met Cys Trp Gly Ser Cys Ala Tyr Thr Ile Gln Ser Ile Glu
1594      1330      1335      1340
1596 Arg Ile Leu Ser Asp Glu Asp Lys Pro Leu Phe Gly Pro Leu Pro Cys
E--> 1597 345      1350      1355      1360
1599 Arg Leu Asp Asp Cys Leu Arg Ser Leu Thr Arg Phe Ala Ala Ala His
1600      1365      1370      1375
1602 Trp Thr Val Ala Ser Val Ser Val Val Gln Gly His Phe Cys Lys Leu
1603      1380      1385      1390
1605 Phe Ala Ser Leu Val Pro Asn Asp Ser His Glu Glu Leu Pro Cys Ile
1606      1395      1400      1405
1608 Leu Asp Ile Asp Met Phe His Leu Leu Val Gly Leu Val Leu Ala Phe
1609      1410      1415      1420
1611 Pro Ala Leu Gln Cys Gln Asp Phe Ser Gly Ile Ser Leu Gly Thr Gly
E--> 1612 425      1430      1435      1440
1614 Asp Leu His Ile Phe His Leu Val Thr Met Ala His Ile Ile Gln Ile
1615      1445      1450      1455
1617 Leu Leu Thr Ser Cys Thr Glu Glu Asn Gly Met Asp Gln Glu Asn Pro
1618      1460      1465      1470
1620 Pro Cys Glu Glu Glu Ser Ala Val Leu Ala Leu Tyr Lys Thr Leu His
1621      1475      1480      1485
1623 Gln Tyr Thr Gly Ser Ala Leu Lys Glu Ile Pro Ser Gly Trp His Leu
1624      1490      1495      1500
1626 Trp Arg Ser Val Arg Ala Gly Ile Met Pro Phe Leu Lys Cys Ser Ala

```

same

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```

E--> 1627 505          1510          1515          1520
1629 Leu Phe Phe His Tyr Leu Asn Gly Val Pro Ser Pro Pro Asp Ile Gln
1630          1525          1530          1535
1632 Val Pro Gly Thr Ser His Phe Glu His Leu Cys Ser Tyr Leu Ser Leu
1633          1540          1545          1550
1635 Pro Asn Asn Leu Ile Cys Leu Phe Gln Glu Asn Ser Glu Ile Met Asn
1636          1555          1560          1565
1638 Ser Leu Ile Glu Ser Trp Cys Arg Asn Ser Glu Val Lys Arg Tyr Leu
1639          1570          1575          1580
1641 Glu Gly Glu Arg Asp Ala Ile Arg Tyr Pro Arg Glu Ser Asn Lys Leu
E--> 1642 585          1590          1595          1600
1644 Ile Asn Leu Pro Glu Asp Tyr Ser Ser Leu Ile Asn Gln Ala Ser Asn
1645          1605          1610          1615
1647 Phe Ser Cys Pro Lys Ser Gly Gly Asp Lys Ser Arg Ala Pro Thr Leu
1648          1620          1625          1630
1650 Cys Leu Val Cys Gly Ser Leu Leu Cys Ser Gln Ser Tyr Cys Cys Gln
1651          1635          1640          1645
1653 Thr Glu Leu Glu Gly Glu Asp Val Gly Ala Cys Thr Ala His Thr Tyr
1654          1650          1655          1660
1656 Ser Cys Gly Ser Gly Val Gly Ile Phe Leu Arg Val Arg Glu Cys Gln
E--> 1657 665          1670          1675          1680
1659 Val Leu Phe Leu Ala Gly Lys Thr Lys Gly Cys Phe Tyr Ser Pro Pro
1660          1685          1690          1695
1662 Tyr Leu Asp Asp Tyr Gly Glu Thr Asp Gln Gly Leu Arg Arg Gly Asn
1663          1700          1705          1710
1665 Pro Leu His Leu Cys Lys Glu Arg Phe Lys Lys Ile Gln Lys Leu Trp
1666          1715          1720          1725
1668 His Gln His Ser Val Thr Glu Glu Ile Gly His Ala Gln Glu Ala Asn
1669          1730          1735          1740
1671 Gln Thr Leu Val Gly Ile Asp Trp Gln His Leu
E--> 1672 745          1750          1755
2157 <210> SEQ ID NO: 6
2158 <211> LENGTH: 1755
2159 <212> TYPE: PRT
2160 <213> ORGANISM: Mouse
2162 <400> SEQUENCE: 6
2163 Met Ala Ser Glu Met Glu Pro Glu Val Gln Ala Ile Asp Arg Ser Leu
2164 1 5 10 15
2166 Leu Glu Cys Ser Ala Glu Glu Ile Ala Gly Arg Trp Leu Gln Ala Thr
2167 20 25 30
2169 Asp Leu Asn Arg Glu Val Tyr Gln His Leu Ala His Cys Val Pro Lys
2170 35 40 45
2172 Ile Tyr Cys Arg Gly Pro Asn Pro Phe Pro Gln Lys Glu Asp Thr Leu
2173 50 55 60
2175 Ala Gln His Ile Leu Leu Gly Pro Met Glu Trp Tyr Ile Cys Ala Glu
2176 65 70 75 80
2178 Asp Pro Ala Leu Gly Phe Pro Lys Leu Glu Gln Ala Asn Lys Pro Ser
2179 85 90 95
2181 His Leu Cys Gly Arg Val Phe Lys Val Gly Glu Pro Thr Tyr Ser Cys

```

13-15

RAW SEQUENCE LISTING

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Input Set : A:\35966B.txt

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2182		100		105		110
2184	Arg Asp Cys	Ala Val Asp	Pro Thr Cys	Val Leu Cys	Met Glu Cys	Phe
2185		115		120		125
2187	Leu Gly Ser	Ile His Arg	Asp His Arg	Tyr Arg Met	Thr Thr Ser	Gly
2188		130		135		140
2190	Gly Gly Gly	Phe Cys Asp	Cys Gly Asp	Thr Glu Ala	Trp Lys Glu	Gly
2191	145		150		155	160
2193	Pro Tyr Cys	Gln Lys His	Lys Leu Ser	Ser Ser Glu	Val Val Glu	Glu
2194		165		170		175
2196	Glu Asp Pro	Leu Val His	Leu Ser Glu	Asp Val Ile	Ala Arg Thr	Tyr
2197		180		185		190
2199	Asn Ile Phe	Ala Ile Met	Phe Arg Tyr	Ala Val Asp	Ile Leu Thr	Trp
2200		195		200		205
2202	Glu Lys Glu	Ser Glu Leu	Pro Glu Asp	Leu Glu Val	Ala Glu Lys	Ser
2203		210		215		220
2205	Asp Thr Tyr	Tyr Cys Met	Leu Phe Asn	Asp Glu Val	His Thr Tyr	Glu
2206	225		230		235	240
2208	Gln Val Ile	Tyr Thr Leu	Gln Lys Ala	Val Asn Cys	Thr Gln Lys	Glu
2209		245		250		255
2211	Ala Ile Gly	Phe Ala Thr	Thr Val Asp	Arg Asp Gly	Arg Arg Pro	Val
2212		260		265		270
2214	Arg Tyr Gly	Asp Phe Gln	Tyr Cys Asp	Gln Ala Lys	Thr Val Ile	Val
2215		275		280		285
2217	Arg Asn Thr	Ser Arg Gln	Thr Lys Pro	Leu Lys Val	Gln Val Met	His
2218		290		295		300
2220	Ser Ser Val	Ala Ala His	Gln Asn Phe	Gly Leu Lys	Ala Leu Ser	Trp
2221	305		310		315	320
2223	Leu Gly Ser	Val Ile Gly	Tyr Ser Asp	Gly Leu Arg	Arg Ile Leu	Cys
2224		325		330		335
2226	Gln Val Gly	Leu Gln Glu	Gly Pro Asp	Gly Glu Asn	Ser Ser Leu	Val
2227		340		345		350
2229	Asp Arg Leu	Met Leu Asn	Asp Ser Lys	Leu Trp Lys	Gly Ala Arg	Ser
2230		355		360		365
2232	Val Tyr His	Gln Leu Phe	Met Ser Ser	Leu Leu Met	Asp Leu Lys	Tyr
2233		370		375		380
2235	Lys Lys Leu	Phe Ala Leu	Arg Phe Ala	Lys Asn Tyr	Arg Gln Leu	Gln
2236	385		390		395	400
2238	Arg Asp Phe	Met Glu Asp	Asp His Glu	Arg Ala Val	Ser Val Thr	Ala
2239		405		410		415
2241	Leu Ser Val	Gln Phe Phe	Thr Ala Pro	Thr Leu Ala	Arg Met Leu	Leu
2242		420		425		430
2244	Thr Glu Glu	Asn Leu Met	Thr Val Ile	Ile Lys Ala	Phe Met Asp	His
2245		435		440		445
2247	Leu Lys His	Arg Asp Ala	Gln Gly Arg	Phe Gln Phe	Glu Arg Tyr	Thr
2248		450		455		460
2250	Ala Leu Gln	Ala Phe Lys	Phe Arg Arg	Val Gln Ser	Leu Ile Leu	Asp
2251	465		470		475	480
2253	Leu Lys Tyr	Val Leu Ile	Ser Lys Pro	Thr Glu Trp	Ser Asp Glu	Leu
2254		485		490		495

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Input Set : A:\35966B.txt

Output Set: N:\CRF4\01292004\J758672.raw

```

2256 Arg Gln Lys Phe Leu Gln Gly Phe Asp Ala Phe Leu Glu Leu Leu Lys
2257          500          505          510
2259 Cys Met Gln Gly Met Asp Pro Ile Thr Arg Gln Val Gly Gln His Ile
2260          515          520          525
2262 Glu Met Glu Pro Glu Trp Glu Ala Ala Phe Thr Leu Gln Met Lys Leu
2263          530          535          540
2265 Thr His Val Ile Ser Met Val Gln Asp Trp Cys Ala Leu Asp Glu Lys
2266 545          550          555          560
2268 Val Leu Ile Glu Ala Tyr Lys Lys Cys Leu Ala Val Leu Thr Gln Cys
2269          565          570          575
2271 His Gly Gly Phe Thr Asp Gly Glu Gln Pro Ile Thr Leu Ser Ile Cys
2272          580          585          590
2274 Gly His Ser Val Glu Thr Ile Arg Tyr Cys Val Ser Gln Glu Lys Val
2275          595          600          605
2277 Ser Ile His Leu Pro Ile Ser Arg Leu Leu Ala Gly Leu His Val Leu
2278          610          615          620
2280 Leu Ser Lys Ser Glu Val Ala Tyr Lys Phe Pro Glu Leu Leu Pro Leu
2281 625          630          635          640
2283 Ser Glu Leu Ser Pro Pro Met Leu Ile Glu His Pro Leu Arg Cys Leu
2284          645          650          655
2286 Val Leu Cys Ala Gln Val His Ala Gly Met Trp Arg Arg Asn Gly Phe
2287          660          665          670
2289 Ser Leu Val Asn Gln Ile Tyr Tyr Tyr His Asn Val Lys Cys Arg Arg
2290          675          680          685
2292 Glu Met Phe Asp Lys Asp Ile Val Met Leu Gln Thr Gly Val Ser Met
2293          690          695          700
2295 Met Asp Pro Asn His Phe Leu Met Ile Met Leu Ser Arg Phe Glu Leu
2296 705          710          715          720
2298 Tyr Gln Leu Phe Ser Thr Pro Asp Tyr Gly Lys Arg Phe Ser Ser Glu
2299          725          730          735
2301 Val Thr His Lys Asp Val Val Gln Gln Asn Asn Thr Leu Ile Glu Glu
2302          740          745          750
2304 Met Leu Tyr Leu Ile Ile Met Leu Val Gly Glu Arg Phe Asn Pro Gly
2305          755          760          765
2307 Val Gly Gln Val Ala Ala Thr Asp Glu Ile Lys Arg Glu Ile Ile His
2308          770          775          780
2310 Gln Leu Ser Ile Lys Pro Met Ala His Ser Glu Leu Val Lys Ser Leu
2311 785          790          795          800
2313 Pro Glu Asp Glu Asn Lys Glu Thr Gly Met Glu Ser Val Ile Glu Ser
2314          805          810          815
2316 Val Ala His Phe Lys Lys Pro Gly Leu Thr Gly Arg Gly Met Tyr Glu
2317          820          825          830
2319 Leu Lys Pro Glu Cys Ala Lys Glu Phe Asn Leu Tyr Phe Tyr His Phe
2320          835          840          845
2322 Ser Arg Ala Glu Gln Ser Lys Ala Glu Glu Ala Gln Arg Lys Leu Lys
2323          850          855          860
2325 Arg Glu Asn Lys Glu Asp Thr Ala Leu Pro Pro Pro Ala Leu Pro Pro
2326 865          870          875          880
2328 Phe Cys Pro Leu Phe Ala Ser Leu Val Asn Ile Leu Gln Cys Asp Val

```

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Input Set : A:\35966B.txt

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```

2329          885          890          895
2331 Met Leu Tyr Ile Met Gly Thr Ile Leu Gln Trp Ala Val Glu His His
2332          900          905          910
2334 Gly Ser Ala Trp Ser Glu Ser Met Leu Gln Arg Val Leu His Leu Ile
2335          915          920          925
2337 Gly Met Ala Leu Gln Glu Glu Lys His His Leu Glu Asn Ala Val Glu
2338          930          935          940
2340 Gly His Val Gln Thr Phe Thr Phe Thr Gln Lys Ile Ser Lys Pro Gly
2341 945          950          955          960
2343 Asp Ala Pro His Asn Ser Pro Ser Ile Leu Ala Met Leu Glu Thr Leu
2344          965          970          975
2346 Gln Asn Ala Pro Ser Leu Glu Ala His Lys Asp Met Ile Arg Trp Leu
2347          980          985          990
2349 Leu Lys Met Phe Asn Ala Ile Lys Lys Ile Arg Glu Cys Ser Ser Ser
2350          995          1000          1005
2352 Ser Pro Val Ala Glu Ala Glu Gly Thr Ile Met Glu Glu Ser Ser Arg
2353 1010          1015          1020
2355 Asp Lys Asp Lys Ala Glu Arg Lys Arg Lys Ala Glu Ile Ala Arg Leu
E--> 2356 025          1030          1035          1040
2358 Arg Arg Glu Lys Ile Met Ala Gln Met Ser Glu Met Gln Arg His Phe
2359          1045          1050          1055
2361 Ile Asp Glu Asn Lys Glu Leu Phe Gln Gln Thr Leu Glu Leu Asp Thr
2362          1060          1065          1070
2364 Ser Ala Ser Ala Thr Leu Asp Ser Ser Pro Pro Val Ser Asp Ala Ala
2365          1075          1080          1085
2367 Leu Thr Ala Leu Gly Pro Ala Gln Thr Gln Val Pro Glu Pro Arg Gln
2368 1090          1095          1100
2370 Phe Val Thr Cys Ile Leu Cys Gln Glu Glu Gln Glu Val Thr Val Gly
E--> 2371 105          1110          1115          1120
2373 Ser Arg Ala Met Val Leu Ala Ala Phe Val Gln Arg Ser Thr Val Leu
2374          1125          1130          1135
2376 Ser Lys Asp Arg Thr Lys Thr Ile Ala Asp Pro Glu Lys Tyr Asp Pro
2377          1140          1145          1150
2379 Leu Phe Met His Pro Asp Leu Ser Cys Gly Thr His Thr Gly Ser Cys
2380          1155          1160          1165
2382 Gly His Val Met His Ala His Cys Trp Gln Arg Tyr Phe Asp Ser Val
2383          1170          1175          1180
2385 Gln Ala Lys Glu Gln Arg Arg Gln Gln Arg Leu Arg Leu His Thr Ser
E--> 2386 185          1190          1195          1200
2388 Tyr Asp Val Glu Asn Gly Glu Phe Leu Cys Pro Leu Cys Glu Cys Leu
2389          1205          1210          1215
2391 Ser Asn Thr Val Ile Pro Leu Leu Leu Pro Pro Arg Ser Ile Leu Ser
2392          1220          1225          1230
2394 Arg Arg Leu Asn Phe Ser Asp Gln Pro Asp Leu Ala Gln Trp Thr Arg
2395          1235          1240          1245
2397 Ala Val Thr Gln Gln Ile Lys Val Val Gln Met Leu Arg Arg Lys His
2398          1250          1255          1260
2400 Asn Ala Ala Asp Thr Ser Ser Ser Glu Asp Thr Glu Ala Met Asn Ile
E--> 2401 265          1270          1275          1280

```

same

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Input Set : A:\35966B.txt

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2403 Ile Pro Ile Pro Glu Gly Phe Arg Pro Asp Phe Tyr Pro Arg Asn Pro
 2404 1285 1290 1295
 2406 Tyr Ser Asp Ser Ile Lys Glu Met Leu Thr Thr Phe Gly Thr Ala Ala
 2407 1300 1305 1310
 2409 Tyr Lys Val Gly Leu Lys Val His Pro Asn Glu Gly Asp Pro Arg Val
 2410 1315 1320 1325
 2412 Pro Ile Leu Cys Trp Gly Thr Cys Ala Tyr Thr Ile Gln Ser Ile Glu
 2413 1330 1335 1340
 2415 Arg Ile Leu Ser Asp Glu Lys Pro Val Phe Gly Pro Leu Pro Cys
 E--> 2416 345 1350 1355 1360
 2418 Arg Leu Asp Asp Cys Leu Arg Ser Leu Thr Arg Phe Ala Ala Ala His
 2419 1365 1370 1375
 2421 Trp Thr Val Ala Leu Leu Pro Val Val Gln Gly His Phe Cys Lys Leu
 2422 1380 1385 1390
 2424 Phe Ala Ser Leu Val Pro Ser Asp Ser Tyr Glu Asp Leu Pro Cys Ile
 2425 1395 1400 1405
 2427 Leu Asp Ile Asp Met Phe His Leu Leu Val Gly Leu Val Leu Ala Phe
 2428 1410 1415 1420
 2430 Pro Ala Leu Gln Cys Gln Asp Phe Ser Gly Ser Ser Leu Ala Thr Gly
 E--> 2431 425 1430 1435 1440
 2433 Asp Leu His Ile Phe His Leu Val Thr Met Ala His Ile Val Gln Ile
 2434 1445 1450 1455
 2436 Leu Leu Thr Ser Cys Thr Glu Glu Asn Gly Met Asp Gln Glu Asn Pro
 2437 1460 1465 1470
 2439 Thr Gly Glu Glu Glu Leu Ala Ile Leu Ser Leu His Lys Thr Leu His
 2440 1475 1480 1485
 2442 Gln Tyr Thr Gly Ser Ala Leu Lys Glu Ala Pro Ser Gly Trp His Leu
 2443 1490 1495 1500
 2445 Trp Arg Ser Val Arg Ala Ala Ile Met Pro Phe Leu Lys Cys Ser Ala
 E--> 2446 505 1510 1515 1520
 2448 Leu Phe Phe His Tyr Leu Asn Gly Val Pro Ala Pro Pro Asp Leu Gln
 2449 1525 1530 1535
 2451 Val Ser Gly Thr Ser His Phe Glu His Leu Cys Asn Tyr Leu Ser Leu
 2452 1540 1545 1550
 2454 Pro Thr Asn Leu Ile His Leu Phe Gln Glu Asn Ser Asp Ile Met Asn
 2455 1555 1560 1565
 2457 Ser Leu Ile Glu Ser Trp Cys Gln Asn Ser Glu Val Lys Arg Tyr Leu
 2458 1570 1575 1580
 2460 Asn Gly Glu Arg Gly Ala Ile Ser Tyr Pro Arg Gly Ala Asn Lys Leu
 E--> 2461 585 1590 1595 1600
 2463 Ile Asp Leu Pro Glu Asp Tyr Ser Ser Leu Ile Asn Gln Ala Ser Asn
 2464 1605 1610 1615
 2466 Phe Ser Cys Pro Lys Ser Gly Gly Asp Lys Ser Arg Ala Pro Thr Leu
 2467 1620 1625 1630
 2469 Cys Leu Val Cys Gly Ser Leu Leu Cys Ser Gln Ser Tyr Cys Cys Gln
 2470 1635 1640 1645
 2472 Ala Glu Leu Glu Gly Glu Asp Val Gly Ala Cys Thr Ala His Thr Tyr
 2473 1650 1655 1660
 2475 Ser Cys Gly Ser Gly Ala Gly Ile Phe Leu Arg Val Arg Glu Cys Gln

same

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Input Set : A:\35966B.txt

Output Set: N:\CRF4\01292004\J758672.raw

E--> 2476 665 1670 1675 1680

2478 Val Leu Phe Leu Ala Gly Lys Thr Lys Gly Cys Phe Tyr Ser Pro Pro

2479 1685 1690 1695

2481 Tyr Leu Asp Asp Tyr Gly Glu Thr Asp Gln Gly Leu Arg Arg Gly Asn

2482 1700 1705 1710

2484 Pro Leu His Leu Cys Gln Glu Arg Phe Arg Lys Ile Gln Lys Leu Trp

2485 1715 1720 1725

2487 Gln Gln His Ser Ile Thr Glu Glu Ile Gly His Ala Gln Glu Ala Asn

2488 1730 1735 1740

2490 Gln Thr Leu Val Gly Ile Asp Trp Gln His Leu

E--> 2491 745 1750 1755

2955 <210> SEQ ID NO: 18

2956 <211> LENGTH: 5205

2957 <212> TYPE: DNA

2958 <213> ORGANISM: Homo sapiens

2960 <400> SEQUENCE: 18

2961 atggcgagcagg agggaggctgg aggtactgag aggatggaaa tcagcgcgga gttacccag 60

2963 acccctcagc gtctggcatc ttgggtgggat cagcaagttg atttttatac tgctttcttg 120

2965 catcatttgg cacaattggg gccagaaatt tactttgctg aaatggaccc agacttggaa 180

2967 aagcaggagg aaagtgtaca aatgtcaata ttcactccac tggaaatgga cttatttggg 240

2969 gaagatccag atatttgctt agagaaattg aagcacagtg gagcatttca gctttgtggg 300

2971 agggttttca aaagtggaga gacaacctat tcttgaggag attgtgcaat tgatccaaca 360

2973 tgtgtactct gtatggactg cttccaggac agtggtcata aaaatcatcg ttacaagatg 420

2975 catacttcta ctggaggagg gttctgtgac tgtggagaca cagaggcatg gaaaactggc 480

2977 cctttttgtg taaatcatga acctggaaga gcaggtacta taaaagagaa ttcacgctgt 540

2979 ccgttgaatg aagaggtaat tgtccaagcc aggaaaatat ttccttcagt gataaaatat 600

2981 gtctgtagaaa tgactatatg ggaagaggaa aaagaactgc ctcctgaact ccagataagg 660

E--> 2983 ~~knryycvndh~~ ~~hsydhgtcat~~ ~~atacagccta~~ ~~caaagagctc~~ ~~ttgactgtga~~ ~~gctcgcagag~~ 720

2985 gccagtttgc ataccactgc cattgacaaa gagggtcgctc gggctgttaa agcgggagct 780

2987 tatgctgctt gccaggaagc aaaggaagat ataaagagtc attcagaaaa tgtctctcaa 840

2989 catccacttc atgtagaagt attacactca gagattatgg ctcatcagaa atttgctttg 900

2991 cgtcttgggt cctggatgaa caaaattatg agctattcaa gtgactttag gcagatcttt 960

2993 tgccaagcat gccttagaga agaacctgac tcggagaatc cctgtctcat aagcaggtta 1020

2995 atgcttttgg atgcaaagct ttataaaagt gcccgtaaga tccttcatga attgatcttc 1080

2997 agcagttttt ttatggagat ggaatacaaa aaactctttg ctatggaatt tgtgaagtat 1140

2999 tataaacaac tgcagaaaga atatatcagt gatgatcatg acagaagtat ctctataact 1200

3001 gcactttcag ttcagatgtt tactgttctt actctggctc gacatcttat tgaagagcag 1260

3003 aatgttatct ctgtcattac tgaaactctg ctagaagttt tacctgagta cttggacagg 1320

3005 aacaataaat tcaacttcca gggttatagc caggacaaat tgggaagagt atatgcagta 1380

3007 atatgtgacc taaagtatat cctgatcagc aaaccacaa tatggacaga aagattaaga 1440

3009 atgcagttcc ttgaaggttt tcgatctttt ttgaagattc ttacctgtat gcagggaatg 1500

3011 gaagaaatcc gaagacaggt tgggcaacac attgaagtgg atcctgattg ggaggctgcc 1560

3013 attgctatac agatgcaatt gaagaatatt ttactcatgt tccaagagtg gtgtgcttgt 1620

3015 gatgaagaac tcttacttgt ggcttataaa gaatgtcaca aagctgtgat gaggtgcagt 1680

3017 accagtttca tatctagtag caagacagta gtacaatcgt gtggacatag tttggaaaca 1740

3019 aagtcctaca gagtatctga ggatcttgta agcatacatc tgccactctc taggaccctt 1800

3021 gctggctctc atgtacgttt aagcaggctg ggtgctgttt caagactgca tgaatttgtg 1860

3023 tcttttgagg actttcaagt agaggtacta gtggaatatc ctttacgttg tctgggtgtg 1920

3025 gttgcccagg ttgttgctga gatgtggcga agaaatggac tgtctcttat tagccagggt 1980

*same**see p.22
for error
explanation*

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DATE: 01/29/2004

PATENT APPLICATION: US/10/758,672

TIME: 15:33:29

Input Set : A:\35966B.txt

Output Set: N:\CRF4\01292004\J758672.raw

```

3027 ttttattacc aagatgttaa gtgcagagaa gaaatgtatg ataaagatat catcatgctt 2040
3029 cagattggtg catctttaat ggatcccaat aagttcttgt tactggtact tcagaggtat 2100
3031 gaacttgccg aggcttttaa caagaccata tctacaaaag accaggattt gattaaacaa 2160
3033 tataatacac taatagaaga aatgcttcag gtccctcatct atattgtggg tgagcggtat 2220
3035 gtacctggag tgggaaatgt gaccaaagaa gaggtcacia tgagagaaat cattcacttg 2280
3037 ctttgcattg aacccatgcc acacagtgcc attgccaaaa atttacctga gaatgaaaat 2340
3039 aatgaaactg gcttagagaa tgtcataaac aaagtggcca catttaagaa accagggtga 2400
3041 tcaggccatg gagtttatga actaaaagat gaatcactga aagacttcaa tatgtacttt 2460
3043 tatcattact ccaaaaccca gcatagcaag gctgaacata tgcagaagaa aagagaaaaa 2520
3045 caagaaaaca aagatgaagc attgccgcca ccaccacctc ctgaattctg cctgctttc 2580
3047 agcaaaagtga ttaacctttc caactgtgat atcatgatgt acattctcag gaccgtattt 2640
3049 gagcgggcaa tagacacaga ttctaacttg tggaccgaag ggatgctcca aatggctttt 2700
3051 catattcttg cattgggttt actagaagag aagcaacagc ttcaaaaagc tcctgaagaa 2760
3053 gaagtaacat ttgactttta tcataaggct tcaagattgg gaagttcagc catgaatata 2820
3055 caaatgcttt tggaaaaact caaaggaatt cccagttag aaggccagaa ggacatgata 2880
3057 acgtggatac ttcagatggt tgacacagtg aagcgattaa gagaaaaatc ttgtttaatt 2940
3059 gtagcaacca catcaggatc ggaatctatt aagaatgatg agattactca tgataaagaa 3000
3061 aaagcagaac gaaaaagaaa agctgaagct gctaggctac atcgccagaa gatcatggct 3060
3063 cagatgtctg ccttacagaa aaacttcatt gaaactcata aactcatgta tgacaatata 3120
3065 tcagaaatgc ctgggaaaga agattccatt atggaggaag agagcacccc agcagtcagt 3180
3067 gactactcta gaattgcttt gggtcctaaa cgggtgccat ctgttactga aaaggaggtg 3240
3069 ctgacgtgca tcctttgcc aagaagaacag gaggtgaaaa tagaaaataa tgccatggta 3300
3071 ttatcggcct gtgtccagaa atctactgcc ttaaccacgc acaggggaaa acccatagaa 3360
3073 ctctcaggag aagccctaga cccacttttc atggatccag acttggcata tggaaactat 3420
3075 acaggaagct gtggtcatgt aatgcacgca gtgtgctggc agaagtattt tgaagctgta 3480
3077 cagctgagct ctgagcagcg cattcatggt gacctttttg acttgaaaag tggagaatat 3540
3079 ctttgccctc tttgcaaatc tctgtgcaat actgtgatcc ccattattcc tttgcaacct 3600
3081 caaaagataa acagtgaaga tgcagatgct cttgctcaac ttttgaccct ggcacggtgg 3660
3083 atacagactg ttctggccag aatatcaggt tataatataa gacatgctaa aggagaâaac 3720
3085 ccaattccta ttttctttaa tcaaggaatg ggagattcta ctttgaggtt ccattccatc 3780
3087 ctgagttttg gcgttgagtc ttcgattaaa tattcaaata gcatcaagga aatgggtatt 3840
3089 ctctttgcc aacaattta tagaattgga ttgaaagtgc cacctgatga aagggatcct 3900
3091 cgagtcccca tgctgacctg gagcacctgc gctttcacta tccaggcaat tgaaaatcta 3960
3093 ttgggagatg aaggaaaacc tctgtttgga gcacttcaaa ataggcagca taatgggtctg 4020
3095 aaagcattaa tgcagtttgc agttgcacag aggattacct gtcctcaggt cctgatacag 4080
3097 aaacatctgg ttctgtctct atcagttgtt cttcctaaca taaaatcaga agatacacca 4140
3099 tgccttctgt ctatagatct gtttcatggt ttggtgggtg ctgtgttagc attcccatcc 4200
3101 ttgtattggg atgaccctgt tgatctgcag ctttcttcag ttagttcttc ctataaccac 4260
3103 ctttatctct tccatttgat caccatggca cacatgcttc agatactact tacagtagac 4320
3105 acaggcctac cccttgctca ggttcaagaa gacagtgaag aggtcattc cgcattctct 4380
3107 ttctttgcag aaatttctca atatacaagt ggctccattg ggtgtgatat tcctggctgg 4440
3109 tatttgggg tctcactgaa gaatggcatc acccttatac ttcgctgtgc tgcattgttt 4500
3111 ttccactatt tacttggggt aactccgctc gaggaactgc ataccaattc tgcagaagga 4560
3113 gagtacatg cactctgtag ctatctatct ttacctacaa atttgttcct gctcttcag 4620
3115 gaatattggg atactgtaag gcccttgctc cagaggcggt gtgcagatcc tgccttacta 4680
3117 aactgtttga agcaaaaaaa caccgtggtc aggtacccta gaaaaagaaa tagtttgata 4740
3119 gagcttctct atgactatag ctgctcctcg aatcaagctt ctcatctcag gtgccacagg 4800
3121 tctgcagatg atgagcgaaa gcatcctgtc ctctgctttt tctgtggggc tatactatgt 4860
3123 tctcagaaca tttgctgcc aaggaaattgtg aacggggaag aggttgagc ttgcattttt 4920

```

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Input Set : A:\35966B.txt

Output Set: N:\CRF4\01292004\J758672.raw

3125 cacgcacttc actgtggagc cggagtctgc attttcctaa aaatcagaga atgccgagtg 4980
 3127 gtcctggttg aaggtaaagc cagaggctgt gcctatccag ctccttactt ggatgaatat 5040
 3129 ggagaaacag accctggcct gaagaggggc aacccccttc atttatctcg tgagcggtat 5100
 3131 cggaagctcc atttggctcg gcaacaacac tgcattatag aagagattgc taggagccaa 5160
 3133 gagactaatc agatgttatt tggattcaac tggcagttac tgtga 5205
 3136 <210> SEQ ID NO: 19
 3137 <211> LENGTH: 1735
 3138 <212> TYPE: PRT
 3139 <213> ORGANISM: Homo sapiens
 3141 <400> SEQUENCE: 19
 3142 Ala Met Glu Gly Asn Met Ala Asp Glu Glu Ala Gly Gly Thr Glu Arg
 3143 1 5 10 15
 3145 Met Glu Ile Ser Ala Glu Leu Pro Gln Thr Pro Gln Arg Leu Ala Ser
 3146 20 25 30
 3148 Trp Trp Asp Gln Gln Val Asp Phe Tyr Thr Ala Phe Leu His His Leu
 3149 35 40 45
 3151 Ala Gln Leu Val Pro Glu Ile Tyr Phe Ala Glu Met Asp Pro Asp Leu
 3152 50 55 60
 3154 Glu Lys Gln Glu Glu Ser Val Gln Met Ser Ile Phe Thr Pro Leu Glu
 3155 65 70 75 80
 3157 Trp Tyr Leu Phe Gly Glu Asp Pro Asp Ile Cys Leu Glu Lys Leu Lys
 3158 85 90 95
 3160 His Ser Gly Ala Phe Gln Leu Cys Gly Arg Val Phe Lys Ser Gly Glu
 3161 100 105 110
 3163 Thr Thr Tyr Ser Cys Arg Asp Cys Ala Ile Asp Pro Thr Cys Val Leu
 3164 115 120 125
 3166 Cys Met Asp Cys Phe Gln Asp Ser Val His Lys Asn His Arg Tyr Lys
 3167 130 135 140
 3169 Met His Thr Ser Thr Gly Gly Gly Phe Cys Asp Cys Gly Asp Thr Glu
 3170 145 150 155 160
 3172 Ala Trp Lys Thr Gly Pro Phe Cys Val Asn His Glu Pro Gly Arg Ala
 3173 165 170 175
 3175 Gly Thr Ile Lys Glu Asn Ser Arg Cys Pro Leu Asn Glu Glu Val Ile
 3176 180 185 190
 3178 Val Gln Ala Arg Lys Ile Phe Pro Ser Val Ile Lys Tyr Val Val Glu
 3179 195 200 205
 3181 Met Thr Ile Trp Glu Glu Glu Lys Glu Leu Pro Pro Glu Leu Gln Ile
 3182 210 215 220
 3184 Arg Glu Lys Asn Glu Arg Tyr Tyr Cys Val Leu Phe Asn Asp Glu His
 3185 225 230 235 240
 3187 His Ser Tyr Asp His Val Ile Tyr Ser Leu Gln Arg Ala Leu Asp Cys
 3188 245 250 255
 3190 Glu Leu Ala Glu Ala Gln Leu His Thr Thr Ala Ile Asp Lys Glu Gly
 3191 260 265 270
 3193 Arg Arg Ala Val Lys Ala Gly Ala Tyr Ala Ala Cys Gln Glu Ala Lys
 3194 275 280 285
 3196 Glu Asp Ile Lys Ser His Ser Glu Asn Val Ser Gln His Pro Leu His
 3197 290 295 300
 3199 Val Glu Val Leu His Ser Glu Ile Met Ala His Gln Lys Phe Ala Leu

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Input Set : A:\35966B.txt

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3200	305				310				315					320		
3202	Arg	Leu	Gly	Ser	Trp	Met	Asn	Lys	Ile	Met	Ser	Tyr	Ser	Asp	Phe	
3203					325				330					335		
3205	Arg	Gln	Ile	Phe	Cys	Gln	Ala	Cys	Leu	Arg	Glu	Glu	Pro	Asp	Ser	Glu
3206				340					345					350		
3208	Asn	Pro	Cys	Leu	Ile	Ser	Arg	Leu	Met	Leu	Trp	Asp	Ala	Lys	Leu	Tyr
3209			355					360					365			
3211	Lys	Gly	Ala	Arg	Lys	Ile	Leu	His	Glu	Leu	Ile	Phe	Ser	Ser	Phe	Phe
3212		370					375					380				
3214	Met	Glu	Met	Glu	Tyr	Lys	Lys	Leu	Phe	Ala	Met	Glu	Phe	Val	Lys	Tyr
3215	385					390				395						400
3217	Tyr	Lys	Gln	Leu	Gln	Lys	Glu	Tyr	Ile	Ser	Asp	Asp	His	Asp	Arg	Ser
3218				405					410						415	
3220	Ile	Ser	Ile	Thr	Ala	Leu	Ser	Val	Gln	Met	Phe	Thr	Val	Pro	Thr	Leu
3221				420					425					430		
3223	Ala	Arg	His	Leu	Ile	Glu	Glu	Gln	Asn	Val	Ile	Ser	Val	Ile	Thr	Glu
3224			435					440					445			
3226	Thr	Leu	Leu	Glu	Val	Leu	Pro	Glu	Tyr	Leu	Asp	Arg	Asn	Asn	Lys	Phe
3227		450					455				460					
3229	Asn	Phe	Gln	Gly	Tyr	Ser	Gln	Asp	Lys	Leu	Gly	Arg	Val	Tyr	Ala	Val
3230	465				470				475						480	
3232	Ile	Cys	Asp	Leu	Lys	Tyr	Ile	Leu	Ile	Ser	Lys	Pro	Thr	Ile	Trp	Thr
3233				485					490					495		
3235	Glu	Arg	Leu	Arg	Met	Gln	Phe	Leu	Glu	Gly	Phe	Arg	Ser	Phe	Leu	Lys
3236			500					505						510		
3238	Ile	Leu	Thr	Cys	Met	Gln	Gly	Met	Glu	Glu	Ile	Arg	Arg	Gln	Val	Gly
3239		515					520					525				
3241	Gln	His	Ile	Glu	Val	Asp	Pro	Asp	Trp	Glu	Ala	Ala	Ile	Ala	Ile	Gln
3242		530				535					540					
3244	Met	Gln	Leu	Lys	Asn	Ile	Leu	Leu	Met	Phe	Gln	Glu	Trp	Cys	Ala	Cys
3245	545					550				555						560
3247	Asp	Glu	Glu	Leu	Leu	Leu	Val	Ala	Tyr	Lys	Glu	Cys	His	Lys	Ala	Val
3248				565				570						575		
3250	Met	Arg	Cys	Ser	Thr	Ser	Phe	Ile	Ser	Ser	Ser	Lys	Thr	Val	Val	Gln
3251			580					585						590		
3253	Ser	Cys	Gly	His	Ser	Leu	Glu	Thr	Lys	Ser	Tyr	Arg	Val	Ser	Glu	Asp
3254			595				600					605				
3256	Leu	Val	Ser	Ile	His	Leu	Pro	Leu	Ser	Arg	Thr	Leu	Ala	Gly	Leu	His
3257		610				615					620					
3259	Val	Arg	Leu	Ser	Arg	Leu	Gly	Ala	Val	Ser	Arg	Leu	His	Glu	Phe	Val
3260	625					630				635						640
3262	Ser	Phe	Glu	Asp	Phe	Gln	Val	Glu	Val	Leu	Val	Glu	Tyr	Pro	Leu	Arg
3263				645				650						655		
3265	Cys	Leu	Val	Leu	Val	Ala	Gln	Val	Val	Ala	Glu	Met	Trp	Arg	Arg	Asn
3266			660					665					670			
3268	Gly	Leu	Ser	Leu	Ile	Ser	Gln	Val	Phe	Tyr	Tyr	Gln	Asp	Val	Lys	Cys
3269		675				680						685				
3271	Arg	Glu	Glu	Met	Tyr	Asp	Lys	Asp	Ile	Ile	Met	Leu	Gln	Ile	Gly	Ala
3272		690				695						700				

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Input Set : A:\35966B.txt

Output Set: N:\CRF4\01292004\J758672.raw

```

3274 Ser Leu Met Asp Pro Asn Lys Phe Leu Leu Leu Val Leu Gln Arg Tyr
3275 705 710 715 720
3277 Glu Leu Ala Glu Ala Phe Asn Lys Thr Ile Ser Thr Lys Asp Gln Asp
3278 725 730 735
3280 Leu Ile Lys Gln Tyr Asn Thr Leu Ile Glu Glu Met Leu Gln Val Leu
3281 740 745 750
3283 Ile Tyr Ile Val Gly Glu Arg Tyr Val Pro Gly Val Gly Asn Val Thr
3284 755 760 765
3286 Lys Glu Glu Val Thr Met Arg Glu Ile Ile His Leu Leu Cys Ile Glu
3287 770 775 780
3289 Pro Met Pro His Ser Ala Ile Ala Lys Asn Leu Pro Glu Asn Glu Asn
3290 785 790 795 800
3292 Asn Glu Thr Gly Leu Glu Asn Val Ile Asn Lys Val Ala Thr Phe Lys
3293 805 810 815
3295 Lys Pro Gly Val Ser Gly His Gly Val Tyr Glu Leu Lys Asp Glu Ser
3296 820 825 830
3298 Leu Lys Asp Phe Asn Met Tyr Phe Tyr His Tyr Ser Lys Thr Gln His
3299 835 840 845
3301 Ser Lys Ala Glu His Met Gln Lys Lys Arg Arg Lys Gln Glu Asn Lys
3302 850 855 860
3304 Asp Glu Ala Leu Pro Pro Pro Pro Pro Glu Phe Cys Pro Ala Phe
3305 865 870 875 880
3307 Ser Lys Val Ile Asn Leu Leu Asn Cys Asp Ile Met Met Tyr Ile Leu
3308 885 890 895
3310 Arg Thr Val Phe Glu Arg Ala Ile Asp Thr Asp Ser Asn Leu Trp Thr
3311 900 905 910
3313 Glu Gly Met Leu Gln Met Ala Phe His Ile Leu Ala Leu Gly Leu Leu
3314 915 920 925
3316 Glu Glu Lys Gln Gln Leu Gln Lys Ala Pro Glu Glu Glu Val Thr Phe
3317 930 935 940
3319 Asp Phe Tyr His Lys Ala Ser Arg Leu Gly Ser Ser Ala Met Asn Ile
3320 945 950 955 960
3322 Gln Met Leu Leu Glu Lys Leu Lys Gly Ile Pro Gln Leu Glu Gly Gln
3323 965 970 975
3325 Lys Asp Met Ile Thr Trp Ile Leu Gln Met Phe Asp Thr Val Lys Arg
3326 980 985 990
3328 Leu Arg Glu Lys Ser Cys Leu Ile Val Ala Thr Thr Ser Gly Ser Glu
3329 995 1000 1005
3331 Ser Ile Lys Asn Asp Glu Ile Thr His Asp Lys Glu Lys Ala Glu Arg
3332 1010 1015 1020
3334 Lys Arg Lys Ala Glu Ala Ala Arg Leu His Arg Gln Lys Ile Met Ala
3335 1025 1030 1035 1040
3337 Gln Met Ser Ala Leu Gln Lys Asn Phe Ile Glu Thr His Lys Leu Met
3338 1045 1050 1055
3340 Tyr Asp Asn Thr Ser Glu Met Pro Gly Lys Glu Asp Ser Ile Met Glu
3341 1060 1065 1070
3343 Glu Glu Ser Thr Pro Ala Val Ser Asp Tyr Ser Arg Ile Ala Leu Gly
3344 1075 1080 1085
3346 Pro Lys Arg Gly Pro Ser Val Thr Glu Lys Glu Val Leu Thr Cys Ile

```

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Input Set : A:\35966B.txt

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```

3347      1090              1095              1100
3349 Leu Cys Gln Glu Glu Gln Glu Val Lys Ile Glu Asn Asn Ala Met Val
3350 1105              1110              1115              1120
3352 Leu Ser Ala Cys Val Gln Lys Ser Thr Ala Leu Thr Gln His Arg Gly
3353              1125              1130              1135
3355 Lys Pro Ile Glu Leu Ser Gly Glu Ala Leu Asp Pro Leu Phe Met Asp
3356              1140              1145              1150
3358 Pro Asp Leu Ala Tyr Gly Thr Tyr Thr Gly Ser Cys Gly His Val Met
3359              1155              1160              1165
3361 His Ala Val Cys Trp Gln Lys Tyr Phe Glu Ala Val Gln Leu Ser Ser
3362 1170              1175              1180
3364 Gln Gln Arg Ile His Val Asp Leu Phe Asp Leu Glu Ser Gly Glu Tyr
3365 1185              1190              1195              1200
3367 Leu Cys Pro Leu Cys Lys Ser Leu Cys Asn Thr Val Ile Pro Ile Ile
3368              1205              1210              1215
3370 Pro Leu Gln Pro Gln Lys Ile Asn Ser Glu Asn Ala Asp Ala Leu Ala
3371              1220              1225              1230
3373 Gln Leu Leu Thr Leu Ala Arg Trp Ile Gln Thr Val Leu Ala Arg Ile
3374              1235              1240              1245
3376 Ser Gly Tyr Asn Ile Arg His Ala Lys Gly Glu Asn Pro Ile Pro Ile
3377 1250              1255              1260
3379 Phe Phe Asn Gln Gly Met Gly Asp Ser Thr Leu Glu Phe His Ser Ile
3380 1265              1270              1275              1280
3382 Leu Ser Phe Gly Val Glu Ser Ser Ile Lys Tyr Ser Asn Ser Ile Lys
3383              1285              1290              1295
3385 Glu Met Val Ile Leu Phe Ala Thr Thr Ile Tyr Arg Ile Gly Leu Lys
3386              1300              1305              1310
3388 Val Pro Pro Asp Glu Arg Asp Pro Arg Val Pro Met Leu Thr Trp Ser
3389 1315              1320              1325
3391 Thr Cys Ala Phe Thr Ile Gln Ala Ile Glu Asn Leu Leu Gly Asp Glu
3392 1330              1335              1340
3394 Gly Lys Pro Leu Phe Gly Ala Leu Gln Asn Arg Gln His Asn Gly Leu
3395 1345              1350              1355              1360
3397 Lys Ala Leu Met Gln Phe Ala Val Ala Gln Arg Ile Thr Cys Pro Gln
3398              1365              1370              1375
3400 Val Leu Ile Gln Lys His Leu Val Arg Leu Leu Ser Val Val Leu Pro
3401              1380              1385              1390
3403 Asn Ile Lys Ser Glu Asp Thr Pro Cys Leu Leu Ser Ile Asp Leu Phe
3404 1395              1400              1405
3406 His Val Leu Val Gly Ala Val Leu Ala Phe Pro Ser Leu Tyr Trp Asp
3407 1410              1415              1420
3409 Asp Pro Val Asp Leu Gln Pro Ser Ser Val Ser Ser Tyr Asn His
3410 1425              1430              1435              1440
3412 Leu Tyr Leu Phe His Leu Ile Thr Met Ala His Met Leu Gln Ile Leu
3413              1445              1450              1455
3415 Leu Thr Val Asp Thr Gly Leu Pro Leu Ala Gln Val Gln Glu Asp Ser
3416              1460              1465              1470
3418 Glu Glu Ala His Ser Ala Ser Ser Phe Phe Ala Glu Ile Ser Gln Tyr
3419              1475              1480              1485

```

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Input Set : A:\35966B.txt

Output Set: N:\CRF4\01292004\J758672.raw

```

3421 Thr Ser Gly Ser Ile Gly Cys Asp Ile Pro Gly Trp Tyr Leu Trp Val
3422      1490                      1495                      1500
3424 Ser Leu Lys Asn Gly Ile Thr Pro Tyr Leu Arg Cys Ala Ala Leu Phe
3425 1505                      1510                      1515                      1520
3427 Phe His Tyr Leu Leu Gly Val Thr Pro Pro Glu Glu Leu His Thr Asn
3428                      1525                      1530                      1535
3430 Ser Ala Glu Gly Glu Tyr Ser Ala Leu Cys Ser Tyr Leu Ser Leu Pro
3431                      1540                      1545                      1550
3433 Thr Asn Leu Phe Leu Leu Phe Gln Glu Tyr Trp Asp Thr Val Arg Pro
3434                      1555                      1560                      1565
3436 Leu Leu Gln Arg Arg Cys Ala Asp Pro Ala Leu Leu Asn Cys Leu Lys
3437 1570                      1575                      1580
3439 Gln Lys Asn Thr Val Val Arg Tyr Pro Arg Lys Arg Asn Ser Leu Ile
3440 1585                      1590                      1595                      1600
3442 Glu Leu Pro Asp Asp Tyr Ser Cys Leu Leu Asn Gln Ala Ser His Phe
3443                      1605                      1610                      1615
3445 Arg Cys Pro Arg Ser Ala Asp Asp Glu Arg Lys His Pro Val Leu Cys
3446                      1620                      1625                      1630
3448 Leu Phe Cys Gly Ala Ile Leu Cys Ser Gln Asn Ile Cys Cys Gln Glu
3449                      1635                      1640                      1645
3451 Ile Val Asn Gly Glu Glu Val Gly Ala Cys Ile Phe His Ala Leu His
3452 1650                      1655                      1660
3454 Cys Lys Ala Arg Gly Cys Ala Tyr Pro Ala Pro Tyr Leu Asp Glu Tyr
3455 1665                      1670                      1675                      1680
3457 Gly Glu Thr Asp Pro Gly Leu Lys Arg Gly Asn Pro Leu His Leu Ser
3458                      1685                      1690                      1695
3460 Arg Glu Arg Tyr Arg Lys Leu His Leu Val Trp Gln Gln His Cys Ile
3461                      1700                      1705                      1710
3463 Ile Glu Glu Ile Ala Arg Ser Gln Glu Thr Asn Gln Met Leu Phe Gly
3464                      1715                      1720                      1725
E--> 3466 Phe Asn Trp Gln Leu Leu *
E--> 3467      1730

```

1735 delete

do not show stop codon, It does
not
represent
an amino acid.

VARIABLE LOCATION SUMMARY

DATE: 01/29/2004

PATENT APPLICATION: US/10/758,672

TIME: 15:33:30

Input Set : A:\35966B.txt

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*error explanation*Use of n's or Xaa's (NEW RULES):

Use of n's and/or Xaa's have been detected in the Sequence Listing.

Use of <220> to <223> is MANDATORY if n's or Xaa's are present.

in <220> to <223> section, please explain location of n or Xaa, and which residue n or Xaa represents.

Seq#:18; N Pos. 662,668

VERIFICATION SUMMARY

DATE: 01/29/2004

PATENT APPLICATION: US/10/758,672

TIME: 15:33:30

Input Set : A:\35966B.txt

Output Set: N:\CRF4\01292004\J758672.raw

L:11 M:270 C: Current Application Number differs, Replaced Current Application Number
L:12 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:710 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
M:332 Repeated in SeqNo=2
L:1537 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:4
M:332 Repeated in SeqNo=4
L:2356 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:6
M:332 Repeated in SeqNo=6
L:2983 M:340 E: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:18
L:3466 M:342 E: Invalid Stop Code On Error, STOP CODON:*
L:3467 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:19